What is claimed is:

1. A near-hermetic microwave semiconductor device comprising:

a substrate;

a Monolithic Microwave Integrated Circuit (MMIC) disposed on said substrate;

a sealant disposed on said MMIC; and

a Backside Interconnect which connects said substrate to said sealant-coated MMIC.

2. The microwave semiconductor device according to claim 1, wherein said substrate is a PWB suitable for ultrahigh frequency applications.

3. The microwave semiconductor device according to claim 2, wherein said ultrahigh frequency applications include Phased Array Antenna (PAA) systems.

4. The microwave semiconductor device according to claim 2, wherein said substrate is formed of one of a liquid crystal polymer (LCP) and a ceramic.

5. The microwave semiconductor device according to claim 1, wherein said sealant is made of silicon carbide.

6. The microwave semiconductor device according to claim 5, wherein said silicon carbide is disposed over benzocyclobutene (BCB) as an interlayer dielectric.

7. The microwave semiconductor device according to claim 1, wherein said MMIC is a GaAs MMIC.

8. The microwave semiconductor device according to claim 5, wherein said silicon carbide forms a layer of approximately 4000 Angstroms in thickness.

9. The microwave semiconductor device according to claim 1, wherein said Backside Interconnect includes plated-through ground vias disposed on said MMIC, and which tie to terminal pins on said substrate.

10. The microwave semiconductor device according to claim 1, further comprising a solder attachment along a periphery of said MMIC, to seal said MMIC to said substrate.

11. The microwave semiconductor device according to claim 10, wherein said solder attachment is formed using AuSn solder.

12. The microwave semiconductor device according to claim 1, further comprising a conformal coating disposed on said sealant.

13. The microwave semiconductor device according to claim 12, further comprising a cover disposed on said conformal-coated MMIC.

14. The microwave semiconductor device according to claim 1, further comprising a cover disposed on said MMIC.

15. A near-hermetic device comprising:

a substrate;

an electronics package disposed on said substrate;

a sealant disposed on said electronics package; and

a Backside Interconnect which connects said substrate to said sealant-coated electronics package.

16. The near-hermetic device according to claim 15, wherein said electronics package is solder-attached to seal said electronics package to said substrate.

17. A near-hermetic microwave semiconductor device, comprising:

a substrate;

a Monolithic Microwave Integrated Circuit (MMIC) disposed on said substrate;

a sealant disposed on said MMIC;

a Backside Interconnect which connects said substrate to said sealant-coated MMIC; and

a conformal coating disposed on said sealant.

18. A near-hermetic microwave semiconductor device, comprising:

a substrate;

a Monolithic Microwave Integrated Circuit (MMIC) disposed on said substrate;

a sealant disposed on said MMIC;

a Backside Interconnect which connects said substrate to said sealant-coated MMIC; and

a protective cover disposed on said sealant-coated MMIC.

19. A method of manufacturing a near-hermetic microwave semiconductor device, comprising:

providing a substrate;

depositing a sealant on a Monolithic Microwave Integrated Circuit (MMIC); and

using a Backside Interconnect to attach said sealant-coated MMIC to said substrate.

20. The method according to claim 19, further comprising:

disposing a conformal coating on said sealant.

21. The method according to claim 20, further comprising:

disposing a cover on said conformal coating.

22. The method according to 19, wherein said substrate is a PWB.

23. The method according to claim 19, further comprising:

soldering said MMIC to said substrate to form a seal.

24. The method according to claim 19, wherein said sealant is a silicon carbide layer.

25. The method according to claim 24, further comprising:

depositing said silicon carbide layer at a thickness of approximately 4000 Angstroms.

26. The method according to claim 25, further comprising:

depositing said silicon carbide over benzocyclobutene (BCB) as an interlayer dielectric.